

CLAIMS

1. A process for treating a non-human animal comprising:
creating a first quantity of charged material comprising at least one additive
5 chosen from the group consisting of pesticide, therapeutic agent adapted for trans-dermal delivery, and cosmetic agent and
directing the charged material toward the animal.
- 10 2. The process of claim 1, wherein the step of creating charged material includes
creating charged material using EHD.
- 15 3. The process of claim 1 wherein the step of creating further includes creating uncharged material.
- 20 4. The process of claim 3 wherein the step of creating further includes creating uncharged material using EHD.
5. The process of claim 1 where in the step of creating comprises creating charged material having a diameter greater than that which is respirable by the animal.
- 25 6. The process of claim 5, wherein about 99 percent by volume of the material is greater than about ten microns in diameter.
7. The process of claim 5, wherein the step of creating comprises creating by a human, and the diameter is greater than that which is respirable by a human.
- 30 8. The process of claim 1, wherein the step of creating comprises creating material having a substantially log normal distribution with a geometric standard deviation of no greater than about 2.0.
9. The process of claim 1, wherein the step of creating comprises selectively creating material using EHD substantially having a pre-determined size and size distribution.

10. The process of claim 1, wherein the step of creating includes first providing a supply of a formulation from which the material is created, the formulation comprising at least one carrier chosen from the group consisting of aqueous-based, oil-based, and organic solvent-based.

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11. The process of claim 10, wherein the formulation comprises a surfactant.

12. The process of claim 1, wherein the step of creating a quantity of charged material generates an acoustic emission that does not provoke an adverse reaction in
10 the animal.

13. The process of claim 1, wherein the step of directing includes distributing the charged material generally uniformly upon a targeted area of the animal.

15 14. The process of claim 1, wherein the step of creating includes creating charged material having momentum towards a targeted area of the animal, the momentum adapted so that the step of directing includes distributing the charged material upon a targeted area of the animal in accordance with the charge on the material.

20 15. The process of claim 1, wherein the step of directing the charged material comprises distributing the additive generally uniformly upon a targeted area of the animal.

25 16. The process of claim 1, wherein the step of directing includes distributing the additive upon a targeted area of the animal in an amount less than that required to produce dermatitis in any portion of the targeted area.

17. The process of claim 1, wherein the step of directing includes adhering at least 95 percent by volume of the charged material to the animal.

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18. The process of claim 1, wherein the step of directing the charged material includes distributing portions of the charged material along generally curved trajectories to non-planar surfaces of the animal.

19. The process of claim 1, wherein the step of directing includes at least a portion of the charged material following a substantially curved trajectory around a portion of the animal.

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20. The process of claim 1, wherein the animal comprises a companion animal.

10 21. The process of claim 1, wherein the step of directing includes inducing the animal to move along a path in which at least a portion of the outer periphery of the animal receives at least a portion of the charged material.

22. The process of claim 1, wherein the step of creating includes creating the charged material using a hand-held device.

15 23. The process of claim 1, wherein the step of directing includes directing the charged material onto a target area of the animal substantially comprising at least one from the group consisting of fur, feathers, scales, or wool.

24. A process for treating a non-human animal comprising:

20 creating a quantity of charged material comprising a pesticide and directing the charged material toward the animal.

25 25. The process of claim 24 wherein the step of creating comprises creating the charged material using EHD.

26. The process of claim 24, wherein the pesticide is chosen from the group consisting of insecticides, acaricides, miticides, and nematocides.

30 27. The process of claim 24, wherein the pesticide comprises both a neo-nicotinoid and a pyrethroid.

28. The process of claim 27, wherein the step of creating comprises creating a quantity of neo-nicotinoid and a quantity of pyrethroid from at least two spray sites.

29. The process of claim 28, wherein the step of creating from at least two spray sites includes alternately creating the quantity of neo-nicotinoid and the quantity of pyrethroid.

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30. The process of claim 28, where the step of creating further includes at least partially discharging at least one of the quantity of neo-nicotinoid and the quantity of pyrethroid.

10 31. The process of claim 28, wherein the step of creating comprises creating using EHD.

32. The process of claim 24, wherein the step of creating comprises creating two quantities of pesticides, including:

15 creating a quantity of a first pesticide having a carrier chosen from the group of carriers consisting of aqueous-based, oil-based, and organic solvent-based and

creating a quantity of a second pesticide having a carrier chosen from the group of carriers consisting of aqueous-based, oil-based, and organic solvent-based, wherein the carriers of the first and second pesticides are from different ones of the
20 group of carriers.

33. The process of claim 32, wherein:

the step of creating comprises creating using EHD and

25 the step of directing includes directing a first pesticide comprising a neo-nicotinoid and directing a second pesticide comprising a pyrethroid toward a target area of the animal.

34. A process for treating a non-human animal comprising:

30 creating a quantity of charged material comprising at least one therapeutic agent adapted for transdermal delivery across the skin of an animal and
directing the charged material toward the animal.

35. The process of claim 34, wherein the step of creating comprises creating the charged material using EHD.
36. The process of claim 34, wherein the therapeutic agent is chosen from the group consisting of veterinary biological products, health supplements, veterinary pharmaceutical products, animal vaccines, antibiotics, anti-inflammatories, chronic care medications, vitamins, birth assistance drugs, hormones, growth enhancers, and combinations thereof.
- 10 37. A process for treating a non-human animal comprising:
creating a quantity of charged material using EHD including a therapeutic agent adapted for use solely on generally intact dermal surfaces, and
directing the charged material toward the animal.
- 15 38. A process for treating a non-human animal comprising:
creating a quantity of charged material comprising at least one cosmetic agent and
directing the charged material toward the animal.
- 20 39. The process of claim 38 wherein the step of creating comprises creating the charged material using EHD.
40. The process of claim 38, wherein the cosmetic agent is chosen from the group consisting of colorant, sheen enhancer, hair straightening compounds, hair detangling compounds, deodorants, odorants, and pheromones.
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41. The process of claim 1, further comprising:
creating a second quantity of charged material and
directing the second quantity of charged material toward the animal.
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42. The process of claim 41, wherein the second quantity of material contains at least one additive chosen from the group consisting of pesticide, therapeutic agent, and cosmetic agent.

43. The process of claim 42 wherein at least one of the steps of creating a first quantity of charged material and creating a second quantity of charged material is performed using EHD.

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44. The process of claim 41 wherein the steps of creating a first quantity of charged material and a second quantity of charged material are performed concurrently for a period of time.

10 45. The process of claim 41 wherein the steps of creating a first quantity of charged material and a second quantity of charged material are performed alternately.

15 46. The process of claim 41 wherein the steps of creating a first quantity of charged material and a second quantity of charged material are performed by charging the first and second quantities with opposite charges.

20 47. A process for treating a non-human animal comprising:
creating a quantity of material using EHD comprising at least one additive chosen from the group consisting of pesticide, therapeutic agent, and cosmetic agent and
directing the material toward the animal.

25 48. The process of claim 47 wherein the therapeutic agent is adapted for trans-dermal delivery of a substance.

30 49. The process of claim 47 wherein the step of creating further includes creating charged material, and the step of directing further includes directing the material towards a target area comprising one of the group consisting of fur, feathers, scales, or wool.

50. The process of claim 47, wherein about 99 percent by volume of the material is greater than about ten microns in diameter.

51. The process of claim 47, wherein the step of directing the charged material toward the animal comprises distributing the charged material in proximity of an animal whereby contact by the animal with at least a portion of the quantity of material is assured.